SPACEX

February 25, 2021

BY ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
45 L Street, N.E.
Washington, DC 20554

Re: *IBFS File No. SAT-MOD-20200417-00037; WT Docket No. 20-443*

Dear Ms. Dortch:

Several months after Space Exploration Holdings, LLC ("SpaceX") filed an application for modification of its license so it could upgrade the safety profile of its constellation, DISH Network Corporation ("DISH") challenged the upgrade making unsupported accusations that SpaceX would be violating the equivalent power flux-density ("EPFD") limits established by the International Telecommunication Union ("ITU").[1] DISH made these accusations in parallel with its efforts to expropriate the 12 GHz band to cash in on its spectrum speculation.[2] SpaceX responded that it had already offered to provide its EPFD data to operators wishing to verify its compliance and that DISH never even requested that data before making its wild assertions.[3] Several months later, DISH demanded the information that SpaceX had already volunteered. Now, after several more months of examining the data and teaming up with a former employee of a SpaceX competitor, DISH returns unable to find any violations of the EPFD rules. Instead, DISH and its paid consultant allege only that they would have used different parameters if they ran SpaceX's network and the way they would run it could violate EPFD limits.[4]

But DISH's contentions are inconsistent with both Commission and ITU practices. Moreover, SpaceX used the same parameter as many other operators, including both (1) DISH's corporate sibling (Hughes Network Systems), and (2) OneWeb, the company that previously employed DISH's paid consultant, at the time that consultant was responsible for OneWeb's EPFD filings at the ITU.[5] Clearly, DISH is more concerned about clearing competitors from the 12 GHz band than avoiding hypocrisy.

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1 *See* Letter from Jeffrey H. Blum to Marlene H. Dortch, IBFS File No. SAT-MOD-20200417-00037, at 5-7 (June 16, 2020).

2 *See, e.g.*, Letter from Alison Minea to Marlene H. Dortch, IBFS File No. SAT-MOD-20180319-00022 and Docket No. RM-11768, at 3 (Dec. 2, 2019) ("concurrent sharing of spectrum between co-primary 5G and NGSO FSS operations is not viable in the 12 GHz Band.").

3 *See* Letter from David Goldman to Marlene H. Dortch, IBFS File No. SAT-MOD-20200417-00037 (June 29, 2020).

4 *See* Letter from Jeffrey H. Blum to Marlene H. Dortch, IBFS File No. SAT-MOD-20200417-00037 and WT Docket No. 20-443 (Feb. 15, 2021) ("DISH Letter").

5 *Id.*, Attachment at 1.

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As the Commission has recognized—and DISH and its consultant well know—the ITU is the expert agency in charge of conducting EPFD analyses and issuing EPFD determinations. Indeed, the Commission now relies upon the EPFD analyses conducted by the ITU, requiring that NGSO FSS operators receive a "favorable" or "qualified favorable" EPFD finding by the ITU prior to initiation of service.[6] Any NGSO system operating in compliance with these limits is considered to have fulfilled its obligation not to cause unacceptable interference to any geostationary orbit satellite network, including DISH's Direct Broadcast Satellite system.[7] In fact, SpaceX entirely avoids communications with its satellites when they are in an area around the geostationary arc, specifically to protect GSO satellites such as DISH's. In this and many other ways, the EPFD rules with which SpaceX complies are likely overly restrictive of NGSO operations, especially considering DISH acknowledges that consumers are fleeing its linear television service. Although DISH apparently would like to install itself as the sole arbiter of EPFD compliance—and would like to do so selectively—the ITU already fills that role, backstopped by the Commission if necessary.

To satisfy the Commission's rules and the terms of its space station authorization,[8] SpaceX has publicly submitted the same data files to the ITU for analysis and confirmation of EPFD compliance that it voluntarily provided to DISH for its consideration. SpaceX is confident that it will receive a favorable determination and has certified as much.[9] And contrary to DISH's assertion that "SpaceX has for many months refused to submit an EPFD analysis,"[10] SpaceX submitted such an analysis with its application to demonstrate that its system as modified would continue to comply.[11]

In its effort to bootstrap its way into an argument that SpaceX would exceed applicable EPFD limits, DISH and its consultant speculate about how SpaceX might operate its system. They implicitly assume that SpaceX would operate in a manner that would violate the Commission's rules and the terms of its license to reach the circular conclusion that such operation would violate the rules and license terms. The fact that DISH and its consultant are so willing to assume that other Commission licensees would casually operate in violation of their authorizations raises serious questions about how DISH and OneWeb operate their systems. But in any event, SpaceX does not operate in such a way and the Commission does not assume that its licensees will engage in such behavior.[12] And once this baseless assumption is removed, the arguments from DISH shatter.

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6 *See* 47 C.F.R. § 25.146(c).

7 *See* ITU Radio Regs. No. 22.5I.

8 *See Space Exploration Holdings, LLC*, 34 FCC Rcd. 12307, ¶ 19(n) (IB 2019).

9 *See* Application, IBFS File No. SAT-MOD-20200417-00037, Technical Attachment at 15 (Apr. 17, 2020) ("SpaceX Application").

10 DISH Letter at 2. DISH also asserts that its analysis is based on "recently disclosed information," *id.* at 3, when in fact it received the EPFD data from SpaceX four months before filing its letter. *See* Letter from David Goldman to Marlene H. Dortch, IBFS File No. SAT-MOD-20200417-00037 (Oct. 15, 2020) (confirming production of EPFD data files).

11 *See* SpaceX Application, Technical Attachment, Annex 2.

12 *See, e.g., Procedures for Reviewing Requests for Relief from State and Local Regulations Pursuant to Section 332(C)(7)(B)(V) of the Communications Act of 1934*, 12 FCC Rcd. 13494, ¶ 151 (1997) ("Generally, we presume

Even on its own terms, DISH's argument does not withstand scrutiny. DISH's speculation relies on the premise that SpaceX has included an unrealistic parameter value in its EPFD data files. Specifically, DISH refers to the parameter "Nco," which indicates the maximum number of beams in any one frequency channel used to serve any one geographical location. SpaceX provided an Nco value of "1" for its user terminal downlinks in the 12 GHz band, which DISH's paid consultant, Marc Dupuis, asserts "is sharply at odds" with the value assigned by other NGSO operators.[13]

Yet DISH and Mr. Dupuis themselves are both tied to other 12 GHz EPFD filings with Nco=1. For example, two sets of EPFD data filed by the United Kingdom on behalf of OneWeb during the time that Mr. Dupuis "directed the Spectrum team, responsible for securing ITU rights to the spectrum/orbit, coordination of the system," assigned an Nco value of 1 for its 12 GHz user terminal downlinks.[14] Similarly, the EPFD data filed by Germany on behalf of Hughes Network Systems GmbH—a company controlled by the same majority shareholder as DISH—also has the same entry of Nco=1 for its 12 GHz downlinks. Indeed, a check of the ITU database of EPFD submissions reveals any number of NGSO systems that have assigned an Nco value of 1. Attachment A hereto lists a selection of EPFD filings by OneWeb and Hughes Network Systems GmbH, as well as some of the other EPFD data filings submitted to the ITU by other NGSO operators, including but not limited to those cited by DISH,[15] for which Nco=1 for downlink beams.[16]

Not surprisingly, neither DISH nor its consultant discuss these data file submissions that were made to the ITU explicitly for the purpose of demonstrating compliance with applicable EPFD limits—even though the Commission would rely upon the ITU's determination based upon that data. While some operators may choose a different value for Nco, many operators have submitted data for validation using Nco=1, just as SpaceX does. While DISH apparently disagrees with the ITU's EPFD limits and how they are applied, those issues are more appropriately discussed within ITU Working Party 4A, the international forum in which interested parties are engaged in technical discussions about GSO/NGSO coexistence. In the meantime, given the evidence that many ITU EPFD filings include an Nco=1 entry, the Commission cannot take seriously Mr. Dupuis's assertion that SpaceX's use of that same value is "sharply at odds" with

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that licensees are in compliance with our rules unless presented with evidence to the contrary."); *2014 Quadrennial Regulatory Review – Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996*, 32 FCC Rcd. 9802, ¶ 107 n.316 (2017) ("We will not assume that our licensees will violate our rules"), *rev'd on other grounds sub nom. Prometheus Radio Project v. FCC*, 939 F.3d 567 (3d Cir. 2019), *cert. granted*, 141 S. Ct. 222 and 223 (2020).

13 DISH Letter, Attachment at 1.

14 *Id.* The relevant ITU filings (designated as THEME and ZIP) were submitted in March 2017, and according to Mr. Dupuis's LinkedIn profile he was OneWeb's Senior Director of Spectrum Affairs from August 2015 to February 2020. Marc Dupuis, LINKEDIN, https://www.linkedin.com/in/marc-dupuis-0110849b/?originalSubdomain=ca. SpaceX has also included in Attachment A, OneWeb filings that predated Mr. Dupuis, but also used Nco=1.

15 *See* DISH Letter at 4.

16 The list includes entries for both the Ku-band (which covers 12 GHz) and the Ka-band (which some NGSO operators, such as Telesat and Amazon, will use to communicate with user terminals).

the practice of other NGSO operators—SpaceX's approach is not even at odds with Mr. Dupuis's own filings.

Accordingly, the central premise of DISH's speculative analysis is false and unserious. Having failed to convince the Commission to issue an NPRM that would give it a windfall by clearing the 12 GHz band of other licensed users, DISH now resorts to more desperate tactics toward the same goal. But despite this maneuvering, the Commission can continue its standard practice of relying on both the ITU's authoritative determination of EPFD compliance and the expectation that licensees will comply with the Commission's rules and the conditions imposed in their authorizations. Those are far more reliable than the musings of a party that has demonstrated it will do almost anything to grow its war chest of unused spectrum.

Sincerely,

/s/ David Goldman

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Director of Satellite Policy

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Attachment

ATTACHMENT A

This attachment provides a selected list of EPFD data files submitted to the International Telecommunication Union ("ITU") for validation. In each case, the list provides the name of the operator for whose benefit the filing was made and the band (Ku or Ka) that it covers, and provides a link to the files in the ITU database. In the notation used below, the parameter "Nco" for downlinks is indicated under the column "nbr_op_sat." The highlighted filings were made by OneWeb during the period that Marc Dupuis, DISH's paid consultant, was Senior Director of Spectrum Affairs.

- **OneWeb**

  Ku-band

1. L6: https://www.itu.int/ITU-R/space/asreceived/Publication/DisplayPublication/24229

sat_oper

ntc_id	lat_fr	lat_to	nbr_op_sat	Click to Add
1	-90	-50	1	
1	-50	-40	1	
1	-40	40	1	
1	40	50	1	
1	50	90	1	

2. L7A: https://www.itu.int/ITU-R/space/asreceived/Publication/DisplayPublication/24230

sat_oper

ntc_id	lat_fr	lat_to	nbr_op_sat	Click to Add
1	-90	90	1	
*				

3. THEME: https://www.itu.int/en/ITU-R/space/Pages/epfdData.aspx (See the Input tab)

sat_oper | non_geo

ntc_id	lat_fr	lat_to	nbr_op_sat
317520386	-90	90	1

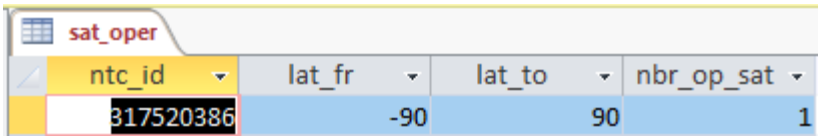
4. ZIP: https://www.itu.int/en/ITU-R/space/Pages/epfdData.aspx (See the Input tab)

sat_oper

ntc_id	lat_fr	lat_to	nbr_op_sat
317520528	-90	90	1

Ka-band

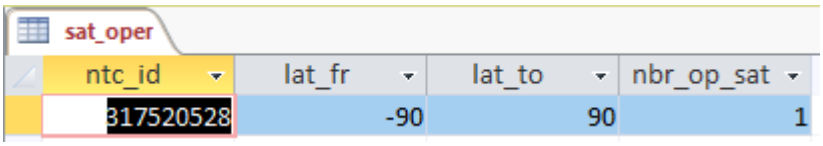
1. THEME: https://www.itu.int/en/ITU-R/space/Pages/epfdData.aspx (See the Input tab)



sat_oper

ntc_id	lat_fr	lat_to	nbr_op_sat
317520386	-90	90	1

2. ZIP: https://www.itu.int/en/ITU-R/space/Pages/epfdData.aspx (See the Input tab)

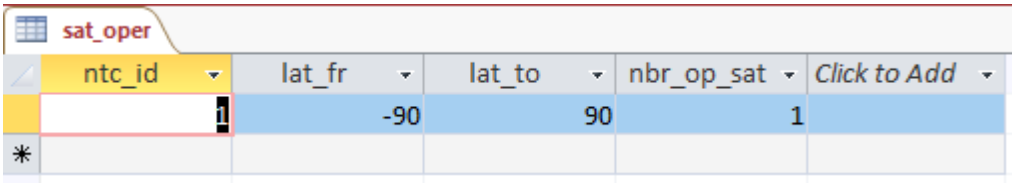


sat_oper

ntc_id	lat_fr	lat_to	nbr_op_sat
317520528	-90	90	1

- **Hughes Network Systems GmbH**
  Both Ku- and Ka-band

  ENGSO LEO: https://www.itu.int/ITU-R/space/asreceived/Publication/DisplayPublication/22926

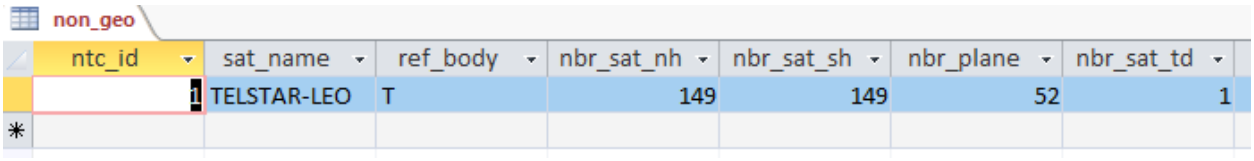


sat_oper

ntc_id	lat_fr	lat_to	nbr_op_sat	Click to Add
1	-90	90	1	
*				

- **Telesat**
  Ka-band

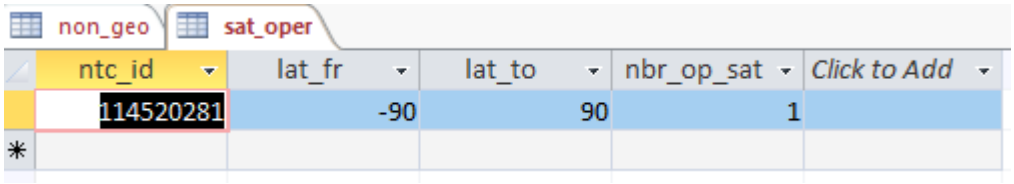
  1. TELSTAR-LEO: https://www.itu.int/ITU-R/space/asreceived/Publication/DisplayPublication/14784



non_geo

ntc_id	sat_name	ref_body	nbr_sat_nh	nbr_sat_sh	nbr_plane	nbr_sat_td
1	TELSTAR-LEO	T	149	149	52	1
*						

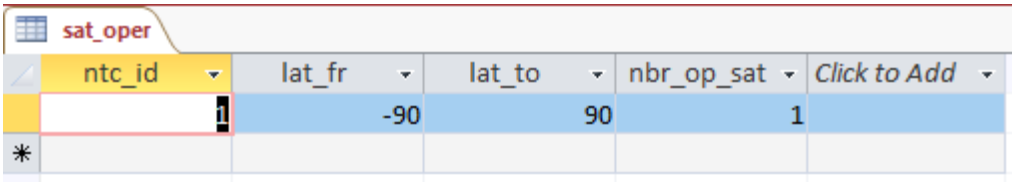
2. MCSAT-2 LEO-2: https://www.itu.int/ITU-R/space/asreceived/Publication/DisplayPublication/26701



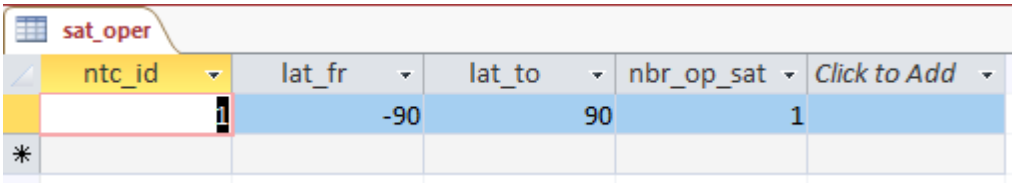
- **Amazon**

  Ka-band

1. USASAT-NGSO-8A: https://www.itu.int/ITU-R/space/asreceived/Publication/DisplayPublication/8716



2. USASAT-NGSO-8B: https://www.itu.int/ITU-R/space/asreceived/Publication/DisplayPublication/8774



3. USASAT-NGSO-8C: https://www.itu.int/ITU-R/space/asreceived/Publication/DisplayPublication/8718